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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/597,974

06/12/2007

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8279.88901

8764

22242 7590 06/16/2009
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EXAMINER

LOGIE, MICHAEL J

ART UNIT

PAPER NUMBER

2881

MAIL DATE

DELIVERY MODE

06/16/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/597,974	Applicant(s) AMELIA ET AL.	
	Examiner MICHAEL J. LOGIE	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>05/14/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

A response to restriction was received 05/21/2009. Applicant elected Group I, claims 1-14 and 17 without traverse. Claims 15-16 and 18-19 have been cancelled and claims 1-14 and 17 are now pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Lines 1-3 of claim 3 recites the limitations "Irradiation cell according to claim 2, wherein said cell further comprises a supply means for a cooling medium and in connection with said supply means, an element, called "diffusor", surrounding said cavity, said diffusor being arranged for guiding said cooling medium around said cavity" which is vague and indefinite. Line 2 of claim 2 recites "a channel for guiding a cooling medium." Is the cooling medium of claim 3 the same as the cooling medium of claim 2? Is the channel of claim 2 the diffuser of claim 3? It will be assumed that since claim 3 is not directed towards the limitations of claim 2 that it was meant to be dependent from claim 1.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-8 and 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Zeisler et al. (US pgPub 2005/0201504).

In regards to claim 1, Zeisler et al. teach an irradiation cell (fig. 1, 100) for producing a radioisotope of interest through the irradiation of a target material by a particle beam ([0019]), comprising a metallic insert (fig. 1, 200, 210) forming a cavity (fig. 1, 190) designed to house the target material ([0020]) and to be closed by an irradiation window (fig. 1, 130), wherein said metallic insert comprises at least two separate metallic parts of different materials (fig. 1, 200, 210, wherein 200 can be made of niobium [0034] and the second part 210 can be made of aluminum [0025]), being composed of at least a first part comprising said cavity (fig. 1, 200 comprises cavity 190) and a second part (fig. 1, 210).

In regards to claim 2, Zeisler et al. teach wherein said second part surrounds said cavity, in a manner to form a channel for guiding a cooling medium ([0024]).

In regards to claim 3, Zeisler et al. teach wherein said cell further comprises a supply means (fig. 1, 240) for a cooling medium ([0024]) and in connection with said supply means, an element, called "diffusor", surrounding said cavity, said diffusor being arranged for guiding said cooling medium around said cavity, and wherein said second part surrounds both said cavity and said diffusor, in a manner to form a return path for said cooling medium between said diffusor and said second part ([0024], note: the diffusor is the space between 200 and 210, in which 210 surrounds as seen in figure 1 and the circulation described in [0024] is indicative of a return path).

In regards to claim 4, Zeisler et al. teach wherein the contact between said first and second part is a metal-to-metal contact, and wherein the sealing between said parts is obtained by at least one O-ring (fig. 1, O-ring 310 with metal to metal contact between 210 and 200).

In regards to claims 5, 7, 8 and 12 describe coupling of the two parts by gold foil, bolts, welding and ridge mounting. Although Zeisler only describes coupling by O-rings, fixing means such as gold foil, bolts and welding are commonly used in assembling devices and integration is part of the common knowledge of a skilled person.

In regards to claim 6, Zeisler et al. teach wherein said insert is composed of two metallic parts (fig. 1, 200, 210).

In regards to claim 13, Zeisler teaches wherein said first part is made of niobium ([0034]).

In regards to claim 14, Zeisler teaches wherein said second part is made of stainless steel ([0025]).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Ferrieri et al. (US patent no. 5,425,063).

In regards to claim 1, Ferrieri teaches an irradiation cell (fig. 1) for producing a radioisotope of interest through the irradiation of a target material by a particle beam (col. 3, lines 55-63), comprising a metallic insert forming a cavity designed to house the target material (fig. 1, 202, 204) and to be closed by an irradiation window (fig. 1, 214), wherein said metallic insert comprises at least two separate metallic parts (fig. 1, 202 and 204) of different materials (col. 9, lines 46-50), being composed of at least a first part comprising said cavity (fig. 1, 202) and a second part (fig. 1, 204).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

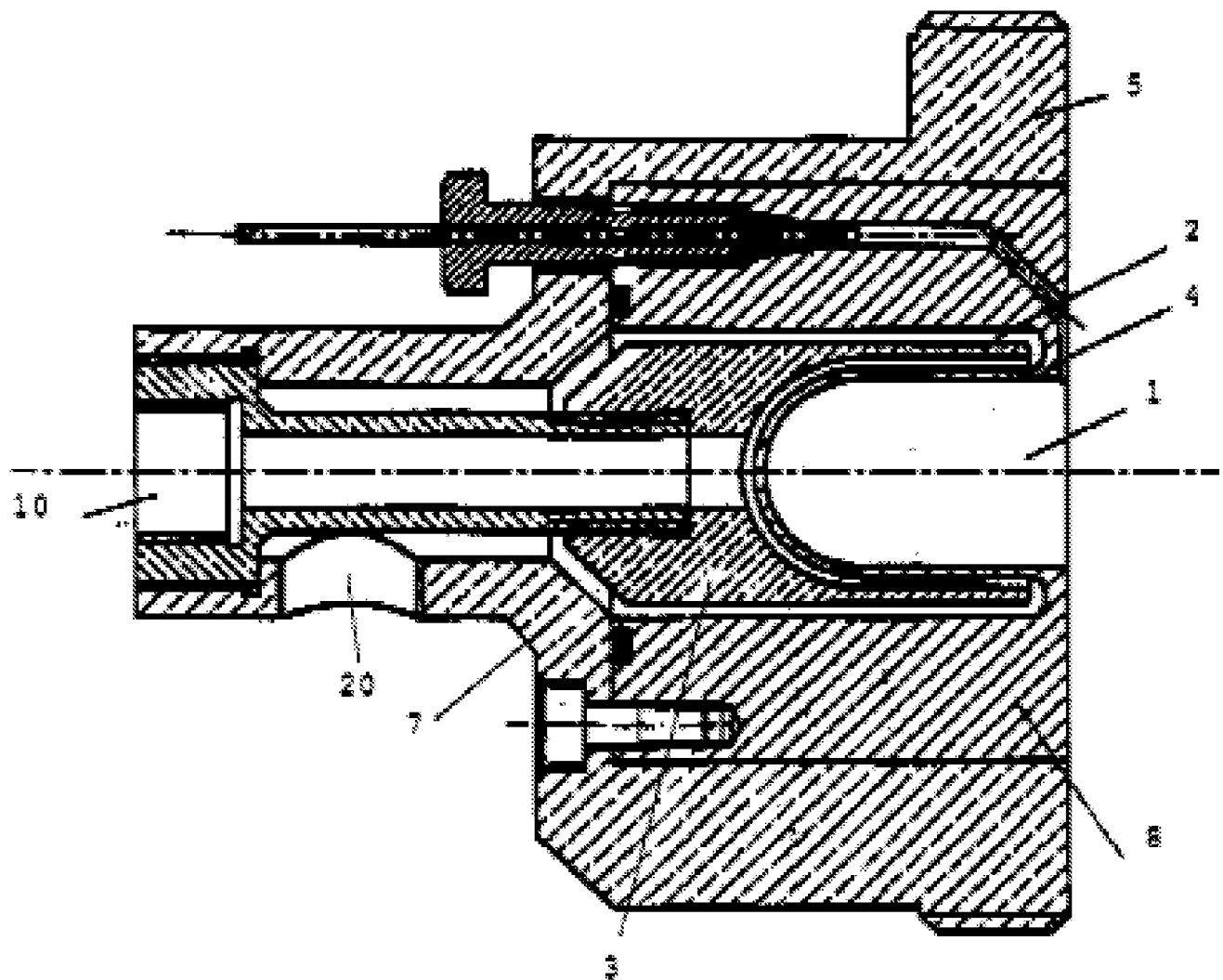
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ferrieri et al. (US patent no. 5,425,063) and further in view of BE 1011263 A6 (herein '263) (Derwent basic abstract submitted).

In regards to claim 9, Ferrieri teaches wherein said first part comprises a flat, circular and ring-shaped portion having an inner circular edge and an outer circular edge, a cylindrical portion rising perpendicularly from the inner circular edge of said flat portion (col. 9, lines 36-40).

Ferrieri differs from the claimed invention by not disclosing a hemispherical portion being on top of said cylindrical portion, the cavity being formed inside said cylindrical and hemispherical portions.

'263 teaches wherein a hemispherical portion being on top of said cylindrical portion, the cavity being formed inside said cylindrical and hemispherical portions. As can be seen in figure 1 below:



'263 shows Cavity 1 is formed by part 8 which has cylindrical walls rising perpendicularly from the right side of the figure to form a hemispherical end.

'263 modifies Ferrieri by teaching an enclosed cavity for the target material removed from the window.

Since '263 and Ferrier both teach an irradiation cell for producing a radioisotope, it would be obvious to one of ordinary skill in the art to have the hemispherical end of

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'263 in the irradiation cell of Ferrier because "the hemispherical cavity increases the power transmitted to the target" (advantage stated in derwent basic abstract).

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zeisler et al. (US pgPub 2005/0201504) and further in view of BE 1011263 A6 (herein '263) (Derwent basic abstract submitted).

In regards to claim 9, Zeisler further teaches wherein said first part comprises a flat, circular and ring-shaped portion having an inner circular edge and an outer circular edge, a cylindrical portion rising perpendicularly from the inner circular edge of said flat portion ([0038], note: fig. 1, where 200 connects to alignment block 250 it forms a flat ring shaped portion having an inner circular edge and outer circular edge with the surface of alignment block 250).

Zeisler differs from the claimed invention by not disclosing a hemispherical portion being on top of said cylindrical portion, the cavity being formed inside said cylindrical and hemispherical portions.

'263 teaches as shown in figure above a cavity 1 formed by part 8 which has cylindrical walls rising perpendicularly from the right side of the figure to form a hemispherical end.

'263 modifies Zeisler by teaching an enclosed cavity for the target material removed from the window.

Since '263 and Zeisler both teach an irradiation cell for producing a radioisotope, it would be obvious to one of ordinary skill in the art to have the hemispherical end of

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'263 in the irradiation cell of Zeisler because "the hemispherical cavity increases the power transmitted to the target" (advantage stated in derwent basic abstract).

In regards to claim 10, Zeisler teaches wherein said cavity has a length of at least 50 mm ([0048] and table 2).

In regards to claim 11, Zeisler teaches wherein said second part has the form of a hollow cylinder ([0020], since 210 surrounds 200, it also has a cylindrical shape that is inherently hollow) having two flat sides essentially perpendicular to a cylindrical side (fig. 1, note arrows pointing from 210), said cylinder being connected by one flat side against the flat portion of said first part (fig. 1, 250, 290, 270, 260).

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zeisler et al. (US pgPub 2005/0201504) and further in view of Wieland (US pgPub 2004/0000637).

In regards to claim 17, Zeisler differs from the claimed invention by not disclosing Method for filling the cavity volume with about 50% of target material, before starting irradiation by using an irradiation cell according to claim 1.

Wieland teaches Method for filling the cavity volume with about 50% of target material, before starting irradiation by using an irradiation cell ([0006]).

Wieland modifies Zeisler by providing a method of partially filling the cavity.

Since both Zeisler and Wieland teach an irradiation cell, it would be obvious to one of ordinary skill in the art to have the partially filled volume of Wieland in the device

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of Zeisler because it would prevent the window from breaking due to a rapid pressure rise because of boiling water.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Pertinent prior art is closely related art that individually or in combination could be considered grounds for rejection. See references cited for a listing of the pertinent prior art found and the prior art found.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL J. LOGIE whose telephone number is (571)270-1616. The examiner can normally be reached on 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 571-272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/M. J. L./

Examiner, Art Unit 2881

/ROBERT KIM/

Supervisory Patent Examiner, Art Unit 2881